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10/828,565	04/21/2004	Felix R. Buchenroth III	16020.1	5267

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EXAMINER

DANIELS, MATTHEW J

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-29, drawn to an article, classified in class 119, subclass 221.
 - II. Claims 30-45, drawn to a method, classified in class 264, subclass 221.
2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the article can be made by another and materially different process such as three dimensional laser scanning of a reef profile, and stereolithography to replicate the three dimensional shape.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, recognized divergent subject matter, and because the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Mr. Dellenbach on 5 October 2005 a provisional election was made without traverse to prosecute the invention of Group II, claims 30-45. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-29 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

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5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 30-33, 35, 38, and 39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406). **As to Claim 30**, Virgili teaches a method of making an artifact mold (1:41-2:53) comprising:

providing a formation (1:43 and 1:47),

providing at least one structure (1:43-45),

adhering the at least one structure to the formation to produce an artifact form (1:43), and

making an artifact mold using the artifact form (2:23-28 and 2:40-48).

Virgili is silent to “reef-organism” structures, and adhering the “reef-organism” structure to the formation. However, it would have been prima facie obvious to provide a reef-organism structure in view of Hudson, who teaches covering a surface with living coral species to create a

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substrate and add complexity to the outer surface of a rock formation (6:42-47). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hudson into that of Virgili in order to create a substrate and add complexity to the outer surface of a simulated rock formation. **As to Claims 31-33**, coral is a naturally occurring reef organism, and also simulates the same (6:42-47). **As to Claim 35**, it would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to provide a plurality of reef organism structures to simulate the same appearance over a larger area in the combined method. **As to Claim 38**, Virgili teaches (i) pouring a moldable material into the reef artifact mold (cement, 2:10-14) and (ii) allowing the moldable material to harden to form a reef article, and removing the artifact from the artifact mold (2:23-28). **As to Claim 39**, repetition of the steps to provide multiple artifacts would have been prima facie obvious over Virgili's method. Virgili is silent to mounting the plurality of artifacts on a structure. However, this aspect is obvious over Hudson's teaching of mounting the artifacts on a structure (6:64-7:8 and 8:28-35).

7. **Claim 34** is rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), and further in view of Marcus (USPN 3012285). Virgili and Hudson teach the subject matter of Claim 30 above under 35 USC 103(a). Virgili and Hudson are silent to the claimed travertine stone. However, Marcus teaches that it is known to form a mold taken from a natural surface of travertine marble (1:55-65). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Marcus into that of Virgili and Hudson in order to provide an aesthetically

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pleasing mottled effect on the surface with rough and irregular cavities of varying depth and size which cause them to stand out in high contrast against the light surface coloration (1:30-37).

This affect would have been desirable in a decorative aquarium.

8. **Claim 36** is rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), and further in view of Finelt (USPN 3095605). Virgili and Hudson teach the subject matter of Claim 35 above under 35 USC 103(a). **As to Claim 36**, Virgili and Hudson appear to be silent to forming a rubber negative mold of each of the structures and pouring a wax into the rubber negative molds to form the structures. However, these aspects are common in the art and are taught by Finelt (1:8-15 and 1:20-34). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Finelt into that of Virgili and Hudson in order to reproduce the desired form repeatedly and accurately, and to minimize work time (3:52).

9. **Claim 37** is rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), Finelt (USPN 3095605), and further in view of Poe (USPN 3254379). Virgili, Hudson, and Finelt teach the subject matter of Claim 36 above under 35 USC 103(a). **As to Claim 37**, Virgili teaches adhering with glue (1:43), but Virgili, Hudson, and Finelt are silent to the claimed adhering by melting a surface layer of wax of each of the structures and adhering them to the formation. However, this aspect would have been prima facie obvious over Poe, who teaches melting a surface layer of wax of each of the structures and adhering each of them to the formation before the wax hardens (4:34-42). It

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would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Poe into that of Virgili, Hudson, and Finelt because Poe specifically suggests that the means of bonding has particular use where a flat pattern of expendable material is used (4:40-43), and because Poe's method lends itself to large scale and efficient production techniques (3:48-55).

10. **Claim 40** is rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), and further in view of Boots (USPN 3888209) and Grillo (USPN 4045933). Virgili and Hudson teach the subject matter of Claim 39 above under 35 USC 103(a). **As to Claim 40**, it is noted that the independent claim (Claim 30) is drawn to "A method for making a reef artifact mold." The Examiner submits that the mounting method claimed in this claim does not materially affect the method of making the reef artifact mold upon which this claim depends because the claimed steps occur after the artifact mold has been made.

However, Hudson additionally teaches that it is known to attach a reef structure to a rocky sea bed with cement (8:31). Virgili and Hudson are silent to drilling holes, inserting bolts, and using a marine epoxy to permanently fix the bolt in the hole, and mounting reef artifacts on the bolts. However, Grillo teaches drilling (4:33) and also that materials for anchoring joining members in holes are well known in the art (4:49-49), including epoxy (4:46). Boots additionally teaches that it is known and obvious to attach an artificial reef by epoxy or waterproof adhesive (7:15-16). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Grillo and Boots into that of

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Virgili and Hudson because epoxies are a well known method for anchoring joining members in holes (Grillo), and because a waterproof epoxy would have been an obvious choice for structures to be mounted underwater.

11. **Claim 41** is rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), and further in view of Galloway (USPN 4126102). Virgili and Hudson teach the subject matter of Claim 39 above under 35 USC 103(a). **As to Claim 41**, it is noted that the independent claim (Claim 30) is drawn to “A method for making a reef artifact mold.” The Examiner submits that the mounting method claimed in this claim does not materially affect the method of making the reef artifact mold upon which this claim depends because the claimed steps occur after the artifact mold has been made.

Virgili and Hudson are silent to the mounting depth below a water surface. However, the Examiner takes the position that article formed by the combined method of Virgili and Hudson is capable of performing the recited intended use, and thus meets the claim. However, additionally, Galloway teaches an aquarium that has a height of approximately 72 inches, or 6 feet tall (3:24-45). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Galloway into that of Virgili and Hudson in order to provide a geometric aquarium which have a height several times the width of the widest side (2:25-41 and all figures).

12. **Claims 42-45** are rejected under 35 U.S.C. 103(a) as being unpatentable over Virgili (USPN 4496511) in view of Hudson (USPN 5215406), and further in view of Di Giacomo

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(USPN 3950477). Virgili and Hudson teach the subject matter of Claim 39 above under 35 USC 103(a). **As to Claim 42**, Virgili and Hudson are silent to the mounting bracket. However, Di Giacomo teaches a mounting bracket partially inserted into the moldable material (4:9-23 and Fig. 6, Item 35). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Di Giacomo into that of Virgili and Hudson in order to provide hooks to assist lifting of the simulated rock formation out of the mold (4:15-21) and assist in mounting the article in its permanent location. **As to Claim 43**, Hudson teaches that it is desirable to provide a crawl space for various organisms (animals) by mounting in a spaced relationship (6:53-61). **As to Claim 44**, Di Giacomo teaches concrete (4:20). Virgili and Hudson also each teach concrete (see the entire documents). **As to Claim 45**, Hudson teaches calcium carbonate (6:45) in the concrete (6:33-35).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Thursday, 7:30 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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MJD 10/24/05

MSD



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